

Ebola virus EBOV (subtype Zaire, strain Ebola virus H.sapiens-wt/SLE/2014/ManoRiver-G3686.1)

General Information

ein (His)

Protein Construction: A DNA sequence encoding the Zaire ebolavirus(strain Ebola virus H.sapiens-wt/SLE/2014/ManoRiver-G3686.1) GP (AIE11917.1) (Met1-Gln650) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ile 33

Species: EBOV

Expression Host: HEK293 Cells

Accession: AIE11917.1

Molecular Weight: 69.3 kDa (predicted)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 95 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/µg of the protein as determined by the LAL method.

Formulation: Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The fourth gene of the EBOV genome encodes a 16-kDa envelope-attached glycoprotein (GP) and a 11 kDa secreted glycoprotein (sGP). Both GP and sGP have an identical 295-residue N-terminus, however, they have different C-terminal sequences. Recently, great attention has been paid to GP for vaccines design and entry inhibitors isolation. GP is a class I fusion protein which assembles as trimers on viral surface and plays an

important role in virus entry and attachment. Mature GP is a disulfide-linked heterodimer formed by two subunits, GP1 and GP2, which are generated from the proteolytical process of GP precursor (pre-GP) by cellular furin during virus assembly. The GP1 subunit contains a mucin domain and a receptor-binding domain (RBD); the GP2 subunit has a fusion peptide, a helical heptad-repeat (HR) region, a transmembrane (TM) domain, and a 4-residue cytoplasmic tail. The RBD of GP1 mediates the interaction of EBOV with cellular receptor (e.g. DC-SIGN/LSIGN, TIM-1, hMGL, NPC1, β -integrins, folate receptor- α , and Tyro3 family receptors), of which TIM1 and NPC1 are essential for EBOV entry; the mucin domain having N- and O-linked glycans enhances the viral attachment to cellular hMGL, and participates in shielding key neutralization epitopes, which helps the virus evades immune elimination. There are large conformation changes of GP2 during membrane fusion, which enhance the insertion of fusion loop into cellular membrane and facilitate the release of viral nucleocapsid core to cytoplasm.

Reference

- Volchkov VE, et al. Processing of the Ebola virus glycoprotein by the proprotein convertase furin. Proc Natl Acad Sci U S A. 1998 May 12;95(10):5762-7.
- Lee JE, et al. Structure of the Ebola virus glycoprotein bound to an antibody from a human survivor. Nature. 2008 Jul 10;454(7201):177-82. doi: 10.1038/nature07082.
- Hood CL, et al. Biochemical and structural characterization of cathepsin L-processed Ebola virus glycoprotein: implications for viral entry and immunogenicity. J Virol. 2010 Mar;84(6):2972-82. doi: 10.1128/JVI.02151-09.
- Cook JD and Lee JE. The secret life of viral entry glycoproteins: moonlighting in immune evasion. PLoS Pathog. 2013 May;9(5):e1003258. doi: 10.1371/journal.ppat.1003258.
- Miller EH and Chandran K. Filovirus entry into cells - new insights. Curr Opin Virol. 2012 Apr;2(2):206-14. doi: 10.1016/j.coviro.2012.02.015.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481